

CLAIMS

WHAT IS CLAIMED IS:

1. A method for supporting address caching, the method comprising:
collecting data indicating access of network devices within a network;
generating a list specifying addresses corresponding to the network devices based on the collected data; and
preparing a message containing the list, wherein the message is multicast to a plurality of terminals in the network for pre-loading of respective caches of the terminals with the list of the addresses.
2. A method according to claim 1, further comprising:
multicasting the message at a low bit rate to the plurality of terminals.
3. A method according to claim 1, wherein the plurality of terminals in the preparing step are satellite terminals.
4. A method according to claim 1, wherein the addresses in the generating step include Internet Protocol (IP) addresses and are translated from respective domain names associated with the network devices.
5. A method according to claim 1, further comprising:
maintaining a count for each of the respective addresses based on the collected data.
6. A method according to claim 1, further comprising:
establishing a communication session with a peer process to convey state information for providing redundant operation.

7. A method according to claim 1, wherein the message in the preparing step includes,

- a first field for indicating a change of one of the addresses in the list;
- a second field for indicating age of the list; and
- a third field for specifying a version of the list.

8. A computer-readable medium bearing instructions for supporting address caching, the instructions being arranged, upon execution, to cause one or more processors to perform the step of a method according to claim 1.

9. A system for supporting address caching, the system comprising:

- a primary component configured to prepare a message containing network addresses of network devices that are accessed, wherein the message is multicast to a plurality of terminals for pre-loading of respective caches of the terminals; and
- a secondary component configured to redundantly operate with the primary component by communicating with the primary component to receive state information of the primary component.

10. A system according to claim 9, wherein the message is multicast at a low bit rate to the plurality of terminals.

11. A system according to claim 9, wherein the plurality of terminals are satellite terminals.

12. A system according to claim 9, wherein the primary component collects data specifying domain names from a source that tracks the access of the network devices associated with the domain names.

13. A system according to claim 12, wherein the network addresses include Internet Protocol (IP) addresses and are translated from respective domain names associated with the network devices.

14. A system according to claim 12, wherein a pre-determined number of the domain names are resolved to the network addresses according corresponding hit count information, the system further comprising:

a memory for buffering the pre-determined number of the network addresses.

15. A system according to claim 9, wherein the network addresses in the message are ordered according to decreasing hit count.

16. A method for resolving network addresses, the method comprising:
receiving a request to resolve a domain name to a network address;
determining whether the domain name corresponds to an entry of a first cache containing a plurality of network addresses that have been multicast from a predetermined terminal, wherein the plurality of network addresses is loaded into the first cache in advance of the receiving step;

in response to a miss in the first cache, determining whether the domain name corresponds to an entry of a second cache that is maintained locally; and

if the domain name yields a hit in either of the caches, responding to the request with the network address corresponding to the requested domain name stored in the respective cache.

17. A method according to claim 16, wherein the network addresses in the determining step are loaded at a low bit rate.

18. A method according to claim 17, wherein the network addresses in the determining step are multicast via a satellite.

19. A method according to claim 16, wherein the network addresses in the generating step include Internet Protocol (IP) addresses and are translated from respective domain names.

20. A method according to claim 16, wherein the request in the receiving step is transparently intercepted from a host, the method further comprising:
outputting a response specifying the requested domain name to the host.

21. A computer-readable medium bearing instructions for proxying address resolution, the instructions being arranged, upon execution, to cause one or more processors to perform the step of a method according to claim 16.

22. A network device for resolving network addresses from domain names, the device comprising:

a memory configured to cache a plurality of network addresses that have been multicast from a predetermined terminal;

a communications interface coupled to the memory and configured to receive a request to resolve a domain name to a network address; and

a processor configured to determine whether the domain name corresponds to an entry of the memory, wherein the processor selectively responds to the request with the network address corresponding to the requested domain name stored in the memory.

23. A device according to claim 22, wherein the network addresses are loaded at a low bit rate.

24. A device according to claim 23, wherein the network addresses are multicast via a satellite.

25. A device according to claim 22, wherein the network addresses include Internet Protocol (IP) addresses and are translated from respective domain names.

26. A device according to claim 22, wherein the request is transparently intercepted from a host, the host receiving a response specifying the requested domain name.

27. A computer-readable medium storing a data structure for supporting address resolution, the medium comprising:

a first section configured to pre-load a plurality of entries, each of the entries includes a domain name and an associated network address, wherein the entries have been multicast for the pre-loading; and

a second section configured to store a plurality of entries of domain names and corresponding network addresses that are retrieved independently from the multicast entries.

28. A computer-readable medium according to claim 27, wherein the sections share a common hash bucket.

29. A computer-readable medium according to claim 28, wherein each of the entries of the first section and second section includes a field specifying a next bucket.

30. A computer-readable medium according to claim 29, wherein each of the entries of the second section further includes a field specifying a next entry of the second section and a field specifying a previous entry of the second section.